

Form PTO-1449 (Rev. 8-83) (modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO. 11333US04	SERIAL NO. 09/819,875
				APPLICANT(s): Roberts, et al.	
				FILING DATE March 28, 2001	GROUP ART UNIT: 1745
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)					

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
MR	✓	3,507,702	04/70	Sanderson	136	86	
	✓	4,729,932	03/88	McElroy	429	34	
	✓	5,041,344	08/91	Kamoshita et al.	429	26	
	✓	5,082,753	01/92	Shimizu et al.	429	26	
	✓	5,084,144	01/92	Reddy et al.	205	104	
	✓	5,200,278	04/93	Watkins et al.	429	24	
	✓	5,230,966	07/93	Voss et al.	429	26	
	✓	5,262,249	11/93	Beal et al.	429	26	
	✓	5,366,818	11/94	Wilkinson et al.	429	13	
		5,478,662	12/95	Strasser	429	13	
	✓	5,482,790	01/96	Yamada et al.	429	26	
	✓	5,503,944	04/96	Meyer et al.	429	13	
	✓	5,648,182	07/97	Hara et al.	429	20	
	✓	5,798,186	08/98	Fletcher et al.	429	13	
	✓	6,068,941	05/00	Fuller et al.	429	13	
MR	✓	6,103,410	08/00	Fuller et al.	429	13	

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NO.	PUBLICATION DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
MR	✓	1,296,831	11/72	Great Britain				
	✓	59-073854	04/84	Japan			X (abstract)	
	✓	60-138855	07/85	Japan			X (abstract)	
	✓	61-045569	03/86	Japan			X (abstract)	
	✓	06-223855	08/94	Japan			X (abstract)	
	✓	WO 95/18469	07/95	PCT				
	✓	WO 97/48142	12/97	PCT				
	✓	DE 197 57 318	12/97	Germany			MR X abstract	X
	✓	0 878 860	11/98	Europe				
MR	✓	WO 00/30200	05/00	PCT				

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Mr. Anthony

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11/17/03

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MR	WO 00/65676	11/00	PCT	/	/	/	/
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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

MR	✓	Adhart, "Environmental Testing of SPE Fuel Cell Assemblies", <i>Proceedings of the 29th Power Sources Conference</i> , June 9-12, (1980)
	✓	Rieke et al. "Temperature Dependence of Water Content and Proton Conductivity in Polyperfluorosulfonic Acid Membranes", <i>Journal of Membrane Science</i> , Vol. 32, pp. 313-28 (1987)
	✓	Tasaka et al. "Freezing and Nonfreezing Water in Charged Membranes", <i>Journal of Membrane Science</i> , Vol. 38, pp. 175-83 (1988)
	✓	Bernardi, "Water-Balance Calculations for Solid-Polymer-Electrolyte Fuel Cells", <i>J. Electrochem. Soc.</i> , Vol. 137, No. 11, pp. 3344-3350 (11/1990)
	✓	Yoshida et al. "Behavior of Water in perflourinated ionomer membranes containing various monovalent cations", <i>Journal of Membrane Science</i> , Vol. 68, pp. 1-10 (1992)
	✓	Chen et al. "Studies of Water in Nafion Membranes Using Zdeuteron and Oxygen-17 Nuclear Magnetic Resonance, and Dielectric Relaxation Techniques", <i>J. Electrochem. Soc.</i> , Vol. 140, No. 4, pp. 889-895 (04/1993)
	✓	Holleck, "Near-Ambient Solid Polymer Fuel Cell", Final Report, EIC Laboratories, Norwood, Massachusetts, (07/1993) <i>Section 3.3 only</i>
	✓	Wilson et al. "Endurance Testing of Low Pt Loading Polymer Electrolyte Fuel Cells", <i>Proceedings of the Symposium on Electrode Materials and Process for Energy Conversion and Storage</i> , Volume 94-23, pp. 145-154 (1994)
	✓	Simpson et al. "Factors Affecting the Performance of Proton Exchange Membrane Fuel Cells", <i>Proceedings of the First International Symposium on Proton Conducting Membrane Fuel Cells I</i> , Vol. 95-23, pp. 182-192 (1995)
	✓	Sen et al. "Determination of Water Content and Resistivity of Perfluorosulfonic Acid Fuel Cell Membranes" <i>Mat. Res. Soc. Symp. Proc.</i> , Vol. 393, pp. 157-62 (1995)
	✓	Cappadonia et al. "Conductance of Nafion 117 membranes as a function of temperature and water content", <i>Solid State Ionics</i> , Vol. 77, pp. 65-69 (1995)
MR	✓	Grot et al. "Evaluation of the Humidification Requirements of New Proton Exchange Membranes for Fuel Cells", <i>Mat. Res. Soc. Symp. Proc.</i> , Vol. 393, pp. 163-168, (1995)

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Mark R. Mullally

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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)		
M	✓	St-Pierre et al. "Advanced Water Management Techniques for Solid Polymer Fuel Cells, <i>Modern Battery Systems II</i> , pp. 318-329 (1997)
	✓	Büchi et al. "Operating Proton Exchange Membrane Fuel Cells Without External Humidification of the Reactant Gases", <i>J. Electrochem. Soc.</i> , Vol. 144, No. 8, pp. 2767-2772 (08/1997)
	✓	Van Bussel et al. "Dynamic model of solid polymer fuel cell water management", <i>Journal of Power Sources</i> , Vol. 71, pp. 218-222 (1998)
		Watanabe et al. "Analyses of Self-Humidification and Suppression of Gas Crossover in Pt-Dispersed Polymer Electrolyte Membranes for Fuel Cells", <i>Journal of Electrochem. Soc.</i> , Vol. 145, pp. 134-1141, (04/1998)
ML	✓	Srinivasan et al. "High Energy Density Proton Exchange Membrane Fuel Cell with Dry Reactant Gases", Center for Electrochemical Systems And Hydrogen Research, Texas A& M University System, pp. 513-516 (No Date)

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EXAMINER <i>M. P. H. Kelly</i>	DATE CONSIDERED: 11/17/03
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EXAMINE R INITIAL		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
MN		6,068,941	05/2000	Fuller et al.	429	13	/

FOREIGN PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NO.	PUBLICATION DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION
							YES NO
MN		6-223855	08/1994	Japan	/	/	X (abstract)
		11-273704	10/1999	Japan	/	/	X (abstract)
		2000-315514	11/2000	Japan	/	/	X (abstract)
		2000-324617	11/2000	Japan	/	/	X (abstract)
		WO 00/65676	11/2000	PCT	/	/	
		1 061 600 A2	12/2000	Europe	/	/	X
MN		199 28 068 A1	12/2000	Germany	/	/	X (abstract)

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<i>M. Ritter</i>	<i>11/17/03</i>
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